Public Health
Seattle & King County
HEALTHY PEOPLE. HEALTHY COMMUNITIES.

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West Nile Virus

Common questions and answers

What is West Nile virus?

West Nile virus causes West Nile fever, encephalitis and meningitis. West Nile fever is typically a mild illness that occurs in about one of five persons who are infected by the virus. West Nile encephalitis and West Nile meningitis are more serious illnesses that occur in less than 1 percent of persons infected by the virus. Encephalitis is a swelling, or inflammation, of the brain, and meningitis is a swelling, or inflammation, of the tissues surrounding the spinal cord and brain.

West Nile virus was previously found in Africa, West Asia and the Middle East. It was discovered in the United States in 1999. West Nile virus can infect humans, birds, mosquitoes, horses and other animals. Birds become infected with West Nile virus and carry the virus in nature. Mosquitoes become infected after feeding on infected birds. At present, West Nile virus has ***not*** been detected in King County, but it has been detected in Washington State.

What are the human health effects of West Nile virus infection?

Most people infected with West Nile virus have no symptoms or a mild illness with fever, muscle aches, fatigue, headache and joint pain (West Nile fever). These persons recover fully and do not require hospital care. A smaller number of infected persons develop encephalitis or meningitis with symptoms of high fever, neck stiffness, confusion, disorientation, coma, tremors, convulsions, muscle weakness, and paralysis. Persons who survive West Nile encephalitis may have long-term symptoms, but recovery from the milder forms of infection is complete. It is assumed that once someone has had an infection caused by West Nile virus they develop long-term protection against being infected again.

Are there persons who are at greater risk of developing more severe illness?

Yes. Persons who are older than 50 years, particularly those who are greater than 70 years of age, are more likely to develop the serious forms of West Nile virus infection. Pregnancy is not known to increase the risk of developing the severe forms of West Nile virus infection.

How is West Nile virus transmitted?

West Nile virus is not transmitted directly from person-to-person or from animal-to-person. There is no evidence that persons can become infected from eating infected animals. Mosquitoes become infected when they feed on infected birds. The virus becomes located in the salivary gland of the mosquito. When the mosquito bites a human or animal, the mosquito injects the virus into its victim. Persons who become ill develop symptoms 3 to 14 days after being infected with West Nile virus. The West Nile virus remains in infected individuals for a relatively short time and does not cause chronic infections.

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Can I get a West Nile virus infection if I receive a blood transfusion or organ donation?

Although rare, West Nile virus has been transmitted through transfusions of whole blood or blood components such as plasma or platelets. Blood component suppliers are taking preventative measures to screen out blood donors who may have been infected with West Nile virus. A nucleic acid laboratory test for West Nile virus has been developed and will be ready for use in screening blood donors beginning in July 2003. In addition, plasma is being stockpiled prior to mosquito season to assure that it is available prior to the testing of the blood supply. There has been a documented instance of West Nile virus transmission by organ transplantation but the risk of this is extremely low.

How much of a problem will West Nile virus become?

Even if West Nile virus becomes established in local birds and mosquitoes, human illness is not expected to be frequent; relatively few mosquitoes are likely to become infected with the virus and most people who do become infected have either no symptoms or mild illness. However, ongoing monitoring for the presence of West Nile virus in birds, horses and humans will remain necessary to track the extent of the problem, prevent serious infections, and determine the best strategies to combat the virus.

Are pets and domestic animals at risk of West Nile virus?

Fortunately, clinical illness due to West Nile virus appears to be rare in dogs and cats, and chickens are resistant as well. Horses, however, are susceptible to West Nile virus infection and severe illness and death can result. An equine West Nile virus vaccine is available and horse owners are strongly encouraged to consult with their veterinarian about immunization. Horses will also benefit from mosquito control efforts.

In King County, what is Public Health doing about West Nile virus?

Public Health surveillance activities are underway to monitor for the appearance of West Nile virus in birds, animals and humans. West Nile virus is usually detected in birds or horses before cases occur in humans. In addition, Public Health provides information on personal protective measures and environmental measures that can be taken to reduce the risk of mosquito-borne diseases.

Health care providers and hospitals are required by law to report to Public Health suspected cases of viral encephalitis including cases suspected to be caused by West Nile virus. For more information, consult the May 2002 issue of the communicable disease newsletter, the *Epi-Log*: http://www.metrokc.gov/health/phnr/prot_res/epilog/vol4205.htm

What is the connection between crows and West Nile virus?

Crows are particularly susceptible to West Nile virus, and often sicken and die from it. Therefore, in partnership with the Washington State Department of Health, Public Health is testing some dead crows to see if they have died from West Nile virus. When Public Health finds a dead crow with West Nile virus, King County will know that the virus has arrived.

What do I do if I find a dead crow?

Call Public Health at 206-205-4394 if you find a dead crow in King County. Information about the crow will be entered into a tracking database. In addition, the crow you find may be selected for testing for West Nile virus. When you call, you will be asked a few questions. First, is the bird freshly dead (dead less than 24 hours)? Second, where and when did you find the dead bird? We

will need to know the address where the bird was found. Third, is the bird undamaged? Only undamaged birds may be tested.

Not all crows need to be tested for Public Health to effectively monitor for West Nile virus. In fact, we receive many more calls reporting dead crows than the laboratory could test. If the crow you find is not appropriate for testing, or if you find a dead bird that is not a crow, you may dispose of it in your garbage can. Public Health is tracking crow deaths, so even if the bird you find will not be tested, we are still interested in the information you provide.

Birds discovered on Friday and Saturday will not be tested and should be disposed of in the garbage. Using gloves or a shovel, double bag the bird in plastic bags and dispose of it in your garbage. Though dead birds will not transmit West Nile virus, you should not pick up a dead animal with your bare hands

What if the dead bird I find is not a crow?

To help us learn more about West Nile virus, Public Health is tracking the deaths of birds other than crows, though we will not be picking these birds up for testing. The types of birds, in addition to crows, that may be affected by West Nile virus and we are interested in receiving reports on are: ravens, jays, magpies, and raptors (eagles, hawks, and owls). Call 206-205-4394 if you find one of these types of birds.

What is the life cycle of the mosquito?

Mosquitoes like still or standing water to lay their eggs. These eggs hatch into larvae and develop into adults in as few as seven days. Some species need only a few ounces of water to lay eggs.

What does a mosquito larva look like?

Larvae ("wigglers") are ¼ to ½ inch long, or smaller. They move by vigorously wiggling or flexing their bodies. They look like tiny aquatic worms.

When are mosquito larvae most likely to be present?

Though there are variations dependent on weather and temperature, mosquito larvae are most likely to be present in King County from March through October.

What can I do to reduce the number of mosquitoes?

Removing sources of standing water on your property and around your home reduces mosquito breeding habitat. Examples of things you can do include:

- Tip out barrels, buckets and wheelbarrows
- Tip out containers such as toys, cans or plant saucers
- Empty children's wading pools when not in use
- Change water in birdbaths and animal troughs at least once a week
- Get rid of used tires
- Clean garden ponds
- Recycle old bottles, buckets and cans
- Clean leaf-clogged gutters
- Empty water from flower pot dishes
- Dump water off of tarps and plastic sheeting
- Repair leaky outdoor faucets
- Cover rain barrels with mosquito screens

Help your elderly or frail neighbors or relatives with these activities. Consider holding a neighborhood clean-up day to get rid of junk that holds standing water.

What can be done to avoid mosquito bites?

- Be aware of the times of day when mosquitoes are most likely to be biting. The prime biting periods are often at dusk and dawn. If you do go outside when mosquitoes are biting, wear long sleeve shirts and long pants. Hats are also useful.
- Consider wearing an insect repellent. Repellents containing the chemical N,N-diethyl-meta-toluamide (DEET) are known to be very effective. Some people are particularly sensitive to DEET and should use caution.
- Children under the age of two should not use insect repellents containing DEET. Older children should use products with the correct percentage of DEET for their age. It is important to read the label and follow the instructions on the label carefully. For more information on DEET, visit the CDC's insect repellent use and safety page: http://www.cdc.gov/ncidod/dvbid/westnile/qa/insect_repellent.htm.
- Ensure that window and door screens are in good repair and fit tightly.

What steps is King County taking to reduce the potential threat of mosquitoes?

- Public Health is working with county agencies, cities, the state and sister agencies nation-wide to learn about the best methods to use to control mosquitoes. King County's approach is balanced and is protective of both humans and the environment.
- Public Health is working to identify the mosquito species that live in our region by collecting data on mosquitoes from a variety of habitats. These data help with effective educational and control programs.

What are some of the substances that King County is considering to control mosquitoes?

- One approach being considered is the application of natural larvicides, in limited and targeted areas, to control immature mosquitoes before they emerge as adults. These larvicides are usually in the form of pellets or briquettes.
- King County will not do aerial spraying to kill adult mosquitoes unless there is a public health emergency, which is unlikely.
- One possible larvicide that may be used is based on a variety of *Bacillus thuringiensis*, which is a control technique well-known to organic gardeners.

What can I do if I have a mosquito problem in my neighborhood?

Reduce breeding habitat on your own property, where possible (see above). If you notice that mosquitoes are a problem, please call Public Health (206-205-4394). Public Health does not have any regulatory authority to require property owners to remove mosquito habitat (except if the habitat is in violation of solid waste laws). However, we can send educational materials that provide guidance on reducing habitat. If the habitat is on public property, we will inform and advise the appropriate property owner. Finally, we are tracking specific locations that seem to be particular mosquito problem areas.

Aren't wetlands and retention ponds sources of mosquito habitat?

Wetlands and other natural water features may potentially be mosquito breeding habitat under certain conditions. Fortunately, wetlands also have many natural predators. Furthermore, wetlands play a critical role in cleaning and holding storm run off – they play a critical public health role. Retention and detention ponds play an important role as well. For information on King County properties such as retention/detention ponds and wetlands, visit http://dnr.metrokc.gov/dnradmin/press/2002/0916wnv.htm

Resources:

For late breaking information, call Public Health's West Nile virus hotline: 206-205-3883.

To report a dead crow or mosquito problem, call Public Health's Environmental Health team at 206.205.4394 during normal business hours – Monday – Friday from 9:00 a.m. to 4:30 p.m.

For information from the King County Department of Natural Resources and Parks on West Nile virus, wetlands and retention/detention ponds, visit:
http://dnr.metrokc.gov/dnradmin/press/2002/0916wnv.htm

For more information on West Nile virus in the state of Washington:
http://www.doh.wa.gov/ehp/ts/Zoo/WNV/WNV.html

For more extensive information about West Nile virus, consult the Centers for Disease Control and Prevention website at: http://www.cdc.gov/ncidod/dvbid/westnile/q&a.htm